

***Allopharynx macallisteri* sp. n. (Trematoda: Plagiorchiidae) from the Mourning Gecko, *Lepidodactylus lugubris*, from Guam, Mariana Islands, Micronesia, with a Key to the Species of the Genus *Allopharynx***

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**ABSTRACT:** *Allopharynx macallisteri* sp. n. (Trematoda: Plagiorchiidae), a new astriotrematid trematode from the small intestine of *Lepidodactylus lugubris*, is described and illustrated. Three of 21 (14%) adult specimens of *L. lugubris* collected from Guam harbored 7 specimens of *A. macallisteri* sp. n.; mean intensity was 2.3, range was 1–4. *Allopharynx macallisteri* sp. n. is distinguished from all other species in the genus by body size, location of cirrus and genital pore, distribution of vitellaria, and position of testes. This is the first report of a species of *Allopharynx* from a gecko host and the Pacific islands. A key to the species of *Allopharynx* is included.

**KEY WORDS:** digenea, Plagiorchiidae, *Allopharynx macallisteri*, gecko, *Lepidodactylus lugubris*, Guam, Micronesia.

Twenty-one female *Lepidodactylus lugubris* (Dumeril and Bibron, 1836) were collected by Richard D. Krizman from central Guam (13°27'N, 144°45'E) during 1976 and deposited in the herpetology collection of the Natural History Museum of Los Angeles County (LACM 141337–141366). All specimens were originally preserved in 10% formalin and later stored in 70% ethanol. Upon examination of the gastrointestinal tracts, we recovered 7 adult trematodes from 3 *L. lugubris*. Subsequent examination of these specimens revealed that they represented a new species within the genus *Allopharynx*, described herein.

#### Materials and Methods

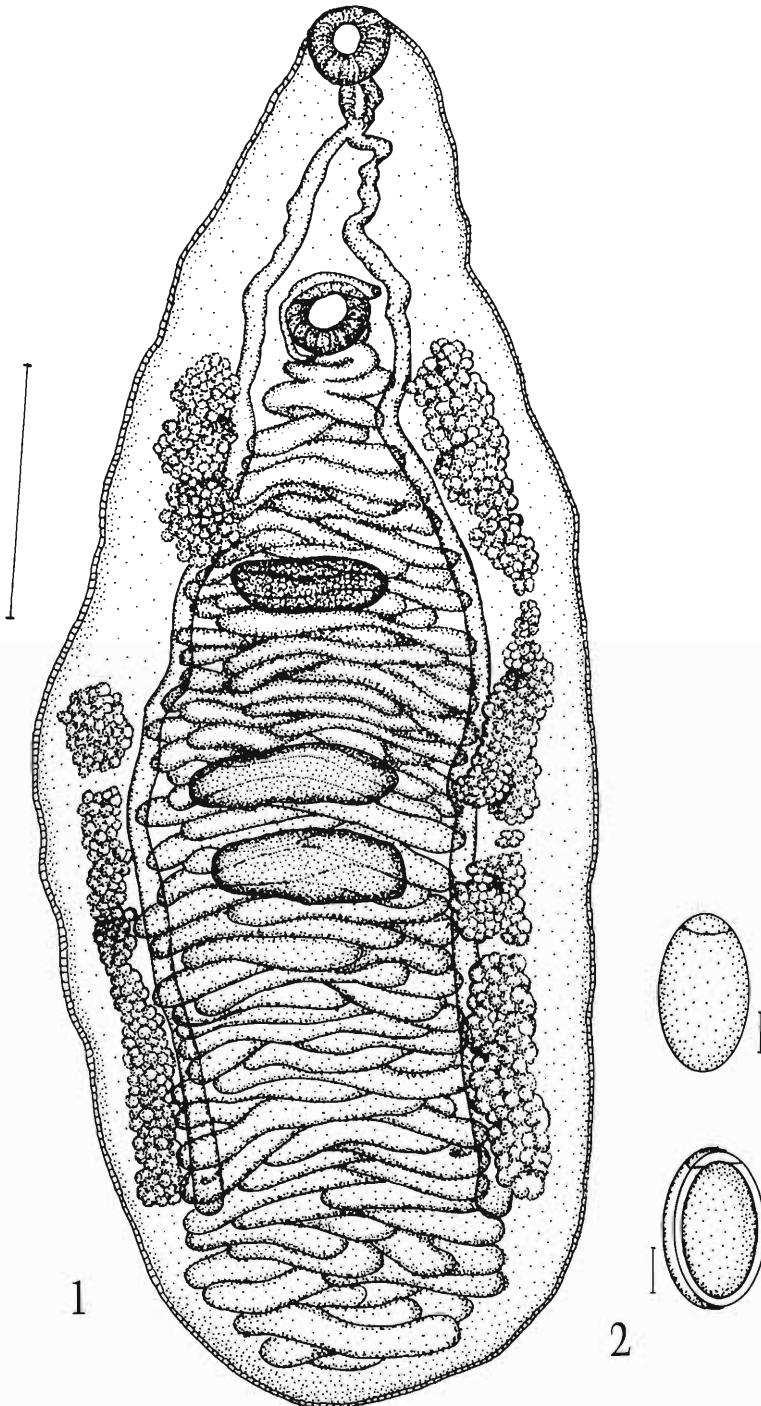
Adult worms were removed from the small intestines of 3 *L. lugubris*, rinsed in 70% ethanol, stained in Delafield's hematoxylin, dehydrated in ethanol, and mounted in Canada balsam. Drawings were made with the aid of a drawing tube. Measurements are in micrometers unless otherwise indicated. The range is followed by the mean in parentheses. Type specimens were deposited in the United States National Parasite Collection (USNPC), Beltsville, Maryland.

#### Results

##### ***Allopharynx macallisteri* sp. n. (Figs. 1 and 2)**

**DESCRIPTION** (based on 5 specimens): Plagiorchiidae (Lühe, 1901) Ward, 1917; Astriotrematinae Baer, 1924. Generic diagnosis based on Acholonu (1976). Body small, spatulate to pyriform, lacking spines, 2.2–3.6 mm (2.75) long, maximum width 0.60–0.95 mm (0.76) at midbody. Oral sucker terminal, ventrally directed, 124–171 (156) long by 124–175 (152) wide. Prepharynx very short to lacking. Pharynx 64–67 (66) long by 68–73 (71) wide. Esophagus very short. Ceca bifurcate just posterior to pharynx and extend to near posterior. Acetabulum approximates size of oral sucker, 126–156 (137) long by 144–192 (165) wide. Cirrus pouch elongate, 144–146 (145) long by 44–47 (45) wide, horizontal to anterior level of acetabulum with coiled seminal vesicle and short ejaculatory duct. Testes equatorial to postequatorial, transversely oval, anterior testis 127–130 (129) long by 443–447 (446) wide, posterior testis 150–154 (152) long by 406–410 (408) wide. Ovary preequatorial, transversely oval, 117–123 (120) long by 300–307 (305) wide, between acetabulum and testes. Mehlis' gland, seminal receptacle, and Laurer's canal

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Figures 1, 2. *Allopharynx macallisteri* from *Lepidodactylus lugubris*. 1. Entire worm, ventral view. 2. Egg, longitudinal cut showing shell thickness and entire egg. Scale bars = 0.5 mm (Fig. 1) and 10  $\mu$ m (Fig. 2).

not observed. Vitellaria in solid fields of follicles, with gaps between fields, lateral to or slightly overlapping cecal arms, beginning just posterior to acetabulum and extending to near posterior extremity. Uterus extensive, extending to posterior end of body, overlapping cecal arms, highly convoluted, passing between testes, continuing between anterior testis and ovary before looping in preovarial region and passing dextral to acetabulum. Eggs, operculate, thick-shelled, 34–36 (35) long by 22–24 (23) wide. Genital pore, ventrosinistral, immediately anterior to acetabulum, approximately 120 posterior to cecal bifurcation.

Taxonomic Summary

TYPE HOST: *Lepidodactylus lugubris*.  
TYPE LOCALITY: Guam, Mariana Islands, Micronesia.  
SITE: Small intestine.  
DEPOSITED SPECIMENS: Holotype USNPC 86935; paratype USNPC 86936.  
ETYMOLOGY: The species is named after Chris T. McAllister for his contributions to the parasitology of amphibians and reptiles.

Discussion

The genus *Allopharynx* (Shtrom, 1928) Price, 1938, currently contains eleven species (Table 1). Gupta and Sharma (1973) have suggested suppressing the genera *Allopharynx* and *Microderma* Mehra, 1931, to subgeneric rank within the genus *Glossimetra* Mehra, 1937. However, *Microderma* and *Glossimetra* are known only from freshwater turtles and are morphologically distinct from *Allopharynx* in size and placement of the cirrus complex, which extends posteriorly to the level of the ovary in *Glossimetra* and nearly half that distance in *Microderma*, as well as in the shape and distribution of vitellaria. Thus, we believe the genus *Allopharynx* is valid and must be maintained.  
*Allopharynx macallisteri* sp. n. most closely resembles *A. leiperi* Simha, 1965, *A. puertoricensis* Acholonu, 1976, and *A. parorchis* Wang, 1980, in small body size (all under 4 mm in length). It also resembles *A. tropidonoti* (MacCallum, 1918) Price, 1938, in shape of ovary and testes (transversely oval). However, *A. macallisteri* differs from *A. leiperi* and *A. tropidonoti* in lacking tegumental spines, and from these two species as well as *A. parorchis* in placement of cirrus and genital pore (lateral,

Table 1. Species in the genus *Allopharynx*.

Species	Length (mm)	Width (mm)	Egg (μm)	Locality	Host	Reference
<i>A. amudariensis</i> (Shtrom, 1928)	4.9	1.4	36 × 19.6	Kazakhstan	<i>Natrix tessellata</i>	Price, 1938
<i>A. japonica</i> Tamura, 1941	5.3	1.3	34 × 17	Japan	<i>Elaphie quadrivirgata</i>	Tamura, 1941
<i>A. leiperi</i> Simha, 1965	1.7–2.2	0.1–0.3	40 × 20	India	<i>Xenochrophis piscator</i>	Simha, 1965
<i>A. macallisteri</i> sp. n.	2.2–3.6	0.6–0.9	35 × 23	Guam	<i>Lepidodactylus lugubris</i>	(This paper)
<i>A. megorchis</i> Simha, 1961	4.4–5.5	2.1–3.2	11 × 1.7*	India	<i>Ptyas mucosus</i>	Simha, 1961
<i>A. mehrai</i> (Gogate, 1935)	4.5	1.0–1.6	41 × 19	Burma	<i>Ptyas korros, P. mucosus</i>	Gogate, 1935
<i>A. multispinosa</i> (Bennett, 1935)	5.4	1.5	27 × 15	U.S.A.	<i>Anolis carolinensis</i>	Bennett, 1935
<i>A. parorchis</i> Wang, 1980	3.3	1.4	36 × 21	China	<i>Dinodon rufozonatum</i>	Wang, 1980
<i>A. puertoricensis</i> Acholonu, 1976	3.5	1.5	28 × 17	Puerto Rico	<i>Anolis cristatellus</i>	Acholonu, 1976
<i>A. riopedrensis</i> Garcia-Diaz, 1966	4.9–6.7	1.6–2.1	20 × 14	Puerto Rico	<i>Anolis cristatellus</i>	Garcia-Diaz, 1966
<i>A. tropidonoti</i> (MacCallum, 1918)	5.0	1.7–2.0	37 × 19	Java	<i>Simonatrix trianguligera</i>	MacCallum, 1918

immediately above acetabulum in *A. macallisteri*; median, just posterior to cecal bifurcation in *A. leiperi*, *A. tropidonoti*, and *A. parorchis*). *Allopharynx macallisteri* differs from the other small-bodied species (*A. puertoricensis*) in lacking a long prepharynx as well as vitelline follicle arrangement and distribution (clustered in solid fields with gaps in *A. macallisteri*, not clustered and continuous in *A. puertoricensis*).

The type species for the genus *Allopharynx*, originally *Distomum tropidonoti*, was described from the gallbladder of the snake, *Sinonatrix trianguligera* (= *Tropidonotus trianguligerus*) from Indonesia. Price (1938) restudied the specimen and concluded that, in the original description, the anterior testis was mistaken for the ovary, a genito-intestinal canal that was described did not exist, and "the measurements were for the most part erroneous." Price (1938) also synonymized the genera *Ophiorchis* Mehra, 1937, *Ptyasiorchis* Mehra, 1937, and *Megacustis* Bennett, 1935, with *Allopharynx*, placing 4 species in the genus: *A. tropidonoti*; *A. amudariensis* (Shtrom, 1928); *A. mehrai* (Gogate, 1935) from species of snakes; and *A. multispinosa* (Bennett, 1935) from the lizard, *Anolis carolinensis*. The only other species of *Allopharynx* to be described from lizards are *A. riopedrensis* García-Díaz, 1966, and *A. puertoricensis* Acholonu, 1976, both from *Anolis cristatellus* in Puerto Rico. *Allopharynx macallisteri* is the first member of this genus to be reported from a gecko host.

Because distinguishing *A. macallisteri* from the other species of the genus is difficult given the overlap in body size measurements (Table 1), and because host species and locality are not necessarily good criteria (*A. puertoricensis* and *A. riopedrensis* are from the same host and locality), a key to the species of *Allopharynx* is included.

#### Key to the Species of *Allopharynx*

- |   |                       |
|---|-----------------------|
| 1a. Body length more than 4 mm .....                            | 2                     |
| 1b. Body length less than 4 mm .....                            | 8                     |
| 2a. Body tegument with spines .....                             | 3                     |
| 2b. Body tegument lacking spines .....                          | 7                     |
| 3a. Body length reaching 5 mm .....                             | 4                     |
| 3b. Body length less than 5 mm .....                            | 6                     |
| 4a. Cirrus pouch and metraterm separated by an acetabulum ..... | <i>A. tropidonoti</i> |

- |   |                          |
|---|--------------------------|
| 4b. Cirrus pouch and metraterm not as above ..... | 5                        |
| 5a. Egg length more than 30 $\mu$ m .....         | <i>A. japonica</i>       |
| 5b. Egg length less than 30 $\mu$ m ..            | <i>A. multispinosa</i>   |
| 6a. Body width more than 2 mm ...                 | <i>A. megorchis</i>      |
| 6b. Body width less than 2 mm .....               | <i>A. mehrai</i>         |
| 7a. Prepharynx present .....                      | <i>A. riopedrensis</i>   |
| 7b. Prepharynx absent .....                       | <i>A. amudariensis</i>   |
| 8a. Prepharynx present .....                      | <i>A. puertoricensis</i> |
| 8b. Prepharynx absent .....                       | 9                        |
| 9a. Genital pore lateral .....                    | <i>A. macallisteri</i>   |
| 9b. Genital pore median .....                     | 10                       |
| 10a. Body width less than 1 mm .....              | <i>A. leiperi</i>        |
| 10b. Body width more than 1 mm ....               | <i>A. parorchis</i>      |

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